Amendments to the Specification

Please replace paragraph 1 on Page 1 with the following amended paragraph:

[001] The instant application claims priority from provisional application serial number 60/225,349 filed August 15, 2000 and entitled "InfoFlo: A Common Infrastructure for Pushing Context to a Mobile PDA," which is hereby incorporated by reference herein in its entirety. The instant application is also related to the following United States Patent Applications ~~having~~:

(1) ~~serial number: (unassigned), attorney docket number: 102078-139,~~ pending U.S. Patent Application Serial No. 09/930,421 filed on August 15, 2001, entitled "METHOD AND APPARATUS FOR INFRARED DATA COMMUNICATION,"

(2) ~~serial number: (unassigned), attorney docket number: 102078-141,~~ pending U.S. Patent Application Serial No. 09/929,979 filed on August 15, 2001, entitled "METHOD AND APPARATUS FOR DETERMINING THE CONTEXT OF A HANDHELD DEVICE,"

(3) ~~serial number: (unassigned), attorney docket number: 102078-142,~~ pending U.S. Patent Application Serial No. 09/929,995 filed on August 15, 2001, entitled "METHOD AND APPARATUS FOR DELIVERING SERVICES IN A CONSTRAINED ENVIRONMENT," all having assignee in common with the instant application, all filed on even date herewith, and all of which are hereby incorporated by reference in their entirety.

Please replace paragraph 9 on Page 5 with the following amended paragraph:

[0009] Prior art techniques for communicating data to wireless devices also have shortcomings. RF signals are the primary means for transmitting data to wireless devices. Cellular, wireless Ethernet, ~~Bluetooth™~~ BLUETOOTH™ (short-range communications of data and voice), and microwave are some of the most common prior art methods for communicating data to wireless devices. These forms of communication also consume large amounts of power.

Please replace paragraph 14 on Page 6 with the following amended paragraph:

[0014] Embodiments of the present invention employ apparatus, computer program product, method, and/or computer-readable-signal for accomplishing reliable unidirectional communications in a data network. More specifically, an apparatus for creating and transmitting a data signal containing a plurality of bytes through a communication medium to a receiving device is provided. A parsing means parses the plurality of bytes into at least one frame containing a subset of the plurality of bytes. A computing means determines a checksum value over the subset to uniquely identify the subset. An integrity element for the subset is provided by a providing means and an embedding means places the checksum value into the integrity element. The integrity element is placed around the frame such that it encapsulates the frame in a manner that can be used to determine if the subset arrived at the receiving device is substantially intact. The integrity element and frame together form a broadcast signal which is transmitted to the receiving device by a transmitting means.

Please replace paragraph 16 on Page 7 with the following amended paragraph:

[0016] In yet a further aspect of the invention, a method of utilizing executable code in a source device is disclosed. The executable code ~~executable code~~ parses the plurality of bytes into a frame, determines a checksum value over the frame, and provides an integrity element. The checksum value is embedded into the integrity element and the integrity element is used to encapsulate the frame to produce a broadcast signal. Then the broadcast signal is made available to the transmitter for transmission to the handheld device through the communication medium.

Please replace paragraph 19 on Page 8 with the following amended paragraph:

[0019] It is advantageous to employ embodiments of the present invention to eliminate problems associated with unidirectional communication signals. A further advantage of the invention is that it reliably transmits unidirectional communication signals to a handheld device having limited processing capabilities. Still a further advantage of the invention is that it uses data structures easily parsed using readily available ~~XML~~ eXtensible markup language (XML)

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parsers. Another advantage of the invention is that special hardware is not required for enabling a handheld device to receive unidirectional communication signals.

Please replace paragraph 42 on Page 12 with the following amended paragraph:

[0042] Fig. 1A illustrates an overall architecture that may be used for practicing disclosed embodiments of the invention. In particular, Fig. 1A shows system 100 comprising service providers 102, 102a, network 104, controller 106 comprising broadcast information (BI) controller ~~106a~~ 106b and service controller ~~106b~~ 106a, one or more emitters 108, one or more points-of-presence (POPs) 110, and one or more client devices 112. As used herein *client*, or *client device*, will be used to identify a handheld device capable of receiving contextually relevant information, and *user* will identify a person operating a client or making use of information contained in a client device.

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Please replace paragraph 54 beginning on Page 16 with the following amended paragraph:

[0054] Network interface 120 receives a broadcast signal from controller 106 via link 114 or wireless link 116. Next, buffer 122, 122a may buffer incoming data to balance variations between the data rate at network interface 120 and optical transmitter 128 to prevent overwriting data awaiting transmission from emitter 108. In addition, buffer 102a performs buffering of data received at PDA interface 131 before placing it on link 114. Data formatter 124 receives data from buffer 122, 122a and performs data conversions needed to transform the received broadcast into a signal compatible with infrared (IR) ~~IR~~ communications interface 130 on client 112. For example, data formatter 124 may convert a received broadcast into a format for optical transmission to client 112. From data formatter 124, the signal goes to IR port driver 126. IR port driver 126 performs amplification and signal conditioning necessary for transmission of broadcast signal as optical radiation. Optical transmitter 128 receives formatted broadcast data from IR port driver 126 and transmits it as an optical signal 142 to client 112.

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Please replace paragraph 55 on Page 17 with the following amended paragraph:

[0055] Client 112 may be comprised of a handheld wireless device. Client 112 may be equipped with one or more types of wireless communication means such as an optical transceiver, cellular transceiver, or other RF transceiver such as IEEE 802.11 or Bluetooth™. Most often, client 112 will be a commercially available personal digital assistant (PDA) such as the ~~Palm Pilot™ from Palm Computing~~ PALM COMPUTING® environment from Palm, Inc. or a handheld computer such as ~~iPAQ Blackberry™ from Compaq Computer Corporation~~ IPAQ™ BLACKBERRY®. As used hereinafter, PDA and client 112 will be used to refer to handheld devices used in practicing embodiments of the invention. Client 112 may be comprised of an ~~infrared (IR)~~ IR communication interface 130, a input/output module 132, an XML parser 134, a processing module 136 and display 139.

Please replace paragraph 81 on Page 26 with the following amended paragraph:

[0081] Fig. 4B illustrates the resulting broadcast information stream 420 inside client 112 after integrity elements 402, 404 and 406 have been removed by XML parser 134. The details associated with receiving and extracting integrity elements from a received signal will be discussed in more detail in conjunction with the detailed description of client 112 discussed later herein. When integrity elements 402, 404 and 406 are removed, the original data stream containing banner elements 302, service elements 304, context elements 306, or other data remain. The ellipses used in Fig. 4B indicate that the broadcast information stream 420 may be substantially endless i.e. it may continue beyond that shown in Fig. 4B.

Please replace paragraph 112 on Page 37 with the following amended paragraph:

[0112] Returning to the airline example, if client 112 requests a new ticket by sending client request data 604 to the airline, the airline may need to charge the ~~passengers~~ passenger's credit card. The credit card validation and charging would take place between the airline and the credit card company or a bank. As such, the airline and credit card company communication may be accomplished using SSC data 610.

Please replace paragraph 115 beginning on Page 38 with the following amended paragraph:

[0115] Fig. 7 illustrates the primary software modules and objects operating within client 112 (Figs. 1A and 1B) for receiving and processing contextually relevant information. Client software configuration 700 may be comprised of a communication module 702 containing broadcast receiver 704; communication library module 707 containing listener queue 706; outgoing message queue 708; an XML parser ~~710~~ 134 containing service tag 712, banner tag 714, location tag 716 and context tag 718; service factory module 720; banner display module 722; context behavior module 724; service container module 730 containing services 1, 2 and 3; and service display module 734. All of the modules receive inputs from other modules or send outputs to other modules using software communication means such as messages or the like.

Please replace paragraph 123 on Page 41 with the following amended paragraph:

[123] Open state 904 is called when CLM 707 is initialized. Open state 904 initializes an external communication medium and obtains memory necessary for CLM 707 to operate. Examples of external communication media are, but are not limited to, IR communication interface 130 or a wireless RF interface such as ~~Bluetooth™~~ BLUETOOTH™.

Please replace paragraph 127 beginning on Page 42 with the following amended paragraph:

[0127] Fig. 10B begins when a complete integrity check tag 402 has been found. First, integrity check tag 402 is extracted from broadcast information (step 1008). Then the method determines if enough data is present to perform an integrity check (step 1010). If enough data is present to perform an integrity check, a checksum value is computed across the data bytes making up window 401a (step 1012). If there is not enough data to perform an integrity check, the method reverts back to step 1002 in find IC element state 908 (Fig. 10A). After the checksum is computed in step 1012, it is compared to checksum value 407 contained in integrity check tag 402. If the computed checksum matches checksum value 407 (decision step 1014),

integrity check tag 402 is stripped from the data (step 1016). If the computed checksum and checksum value 407 do not match (decision step 1014), control is passed to step 1002 in find IC element state 908 (Fig. 10A) and more data is received. After integrity check tag 402 is stripped, control is passed to create XML element state 912 (step 1018).

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Please replace the Abstract on Page 67 with the following amended Abstract:

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A system and method for performing reliable unidirectional communication in a data network is disclosed. Unidirectional data is sent from a transmitting device to a receiving device. Prior to transmission, the data is divided into a window ~~(401a)~~ (401b) comprised of data bytes. A checksum value (407) is computed across data bytes comprising window ~~(401a)~~ (401b). Checksum value (407) is placed into an XML integrity element ~~(402)~~ (404) that encapsulates window ~~(401a)~~ (401b) in a manner allowing a receiving device to use the contents of integrity element ~~(402)~~ (404) to validate the received window ~~(401a)~~ (401b). Checksum value (407) is compared to a second check sum value computed across window ~~(401a)~~ (401b) at the receiving device. If checksum value (407) matches the second checksum value, window ~~(401a)~~ (401b) is validated.